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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/683,165	11/28/2001	Edward Robert Laliberte	GEN-0318	5964

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EXAMINER

LEFLORE, LAUREL E

ART UNIT	PAPER NUMBER
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2673

DATE MAILED: 07/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/683,165

Applicant(s)

LALIBERTE ET AL.

Examiner

Laurel E LeFlore

Art Unit

2673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 and 20-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 and 20-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-25 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1, 12 and 20 recite the limitation “depressible keys embossed on the membrane”. However, the specification as originally filed contains no such subject matter. The specification discloses on paragraph [0020], “The membrane 40 further includes ten dome embossed keys defining the membrane keypad 20, and four embossed LED windows 42.” However, disclosing embossed keys that define a membrane keypad does not disclose keys embossed ON the membrane keypad.

Claims 12 and 20 recite, “the housing has an opening for accessing both the display window and the keypad”. However, the specification as originally filed does not disclose an “opening”.

Claims 23-25 discloses, “the front surface is uninterrupted except for a plurality of mounting holes”. However the specification as originally filed does not disclose a “front surface is uninterrupted”. Further, it is unclear what is meant by and uninterrupted front

surface, as the surface of the membrane of the immediate application is interrupted by, for instance, keys, LEDs, and a display window.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-6, 8, 10-18 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Nishikawa et al. 5,907,375.

5. In regard to claim 1, Nishikawa et al. discloses a resistive touch membrane (see figure 1, element 1) for an operator interface. See column 9, lines 18-28, in which Nishikawa discloses the resistive nature of his input-output unit (operator interface).

Nishikawa further discloses that the membrane has integrated touchscreen and keys. See column 9, lines 42-49, disclosing, “the input switches 7 placed on the switch matrix board 1 are placed below not only the liquid crystal display screen 2, but also the ten-key numerical pad 4 disposed on the panel 3. That is, the input switches electrically conducting when the ten-key numerical pad 4 is pressed and the input switches electrically conducting when the virtual operation buttons are pressed are placed on one membrane board 6.” In this way, the touchscreen and keys are integrated with the membrane.

The membrane of Nishikawa inherently has a front surface. For instance, the front surface is the surface shown in figure 1.

Nishikawa further discloses a display window for the touchscreen of the membrane, the display window including touch regions occupying a portion of the front surface of the membrane. See column 8, lines 60-61, disclosing, "numeral 2 [of figure] is an information display screen superposed on the switch matrix board 1". In this way, the information display screen 2 of Nishikawa, which includes touch regions, is a display window which occupies a portion of the front surface of the membrane. Further see column 9, lines 32-35, disclosing, "a part of the liquid crystal display screen 2 is directly pressed, whereby the corresponding input switch 7 on the switch matrix board 1 can be pressed." Thus, the display window and touch regions of Nishikawa occupy a portion of the front surface of the membrane.

Nishikawa further discloses a membrane keypad. See figure 1, element 4 and column 9, lines 45-49, disclosing, "ten-key numerical pad". The membrane keypad comprises depressible keys embossed on the membrane and occupying a portion of the front surface of the membrane. Note, as disclosed above, "input switches electrically conducting when the ten-key numerical pad 4 is pressed". See column 9, lines 20-22 and 24-28, disclosing that these "input switches 7 placed like a matrix on a membrane board. The input switches 7 are formed by matrix-wiring of key electrodes made of steel on the membrane board 6. [Thus they are embossed on the membrane, as best understood.]...Further, to produce a sense of operation when the input keys 7 are pressed, the part of each input switch 7 corresponding to the key electrode is provided with a plate spring 7a like a as shown in FIG. 3, for producing adequate resistance to press pressure." Thus, they are depressible.

Nishikawa further discloses in column 9, lines 20-22, and referring to figure 1, a connector system of electrical connectors extending from the touch membrane, "The input switches 7 are formed by matrix-wiring of key electrodes made of steel on the membrane board 6." By "matrix-wiring", it is understood that the key electrodes are formed in a pattern of rows and columns intersecting each other. Thus, a pair of electrical connectors, a row and a column, are associated with each input switch 7. See column 9, lines 45-49, an in reference to figure 1, disclosing, "the input switches electrically conducting when the ten-key numerical pad 4 is pressed and...when the virtual operation buttons [of the touch panel] are pressed". In this way, each touch region and key is associated with a pair of electrical connectors within the connector system. In figure 1, touch screen 5 is next to the key pad 4 as they sit on the membrane 6. Therefore, it is understood that each key would share one electrical connector in common with one of the touch regions, namely the electrical connectors running in a row direction in the "matrix-wiring" would be in common.

6. In regard to claim 12, see rejection of claim 1. Also see column 8, lines 57-58, disclosing that the invention is applied to a control panel of a copier. Thus, a housing (the copier) is disclosed. Further note that figure 1 depicts the membrane as a thin sheet of material. Further it is inherent that the housing has an opening for accessing both the display window and the keypad. Without such accessing opening, the invention would be inoperable.

7. In regard to claims 2 and 13, again referring to figure one, Nishikawa depicts touch screen 5 is next to the keypad 4 as they sit on the membrane 6. Therefore, it is

understood that each key would be associated with one electrical connector that is not in common with any of the touch regions, namely the electrical connectors running in a vertical direction in the “matrix-wiring” would not be in common.

8. In regard to claims 3, 14 and 22, see rejections of claims 1 and 2.

9. In regard to claims 4 and 15, see rejections of claims 1, 2 and 12. As depicted in figure 1 of Nishiwaka, the keys 4 sits next to the touch region 5 on top of the common touch membrane 1. Thus, they share the dimension C of row connections, the touch region has A column connections, the keys have B column connections, and $A+B=D$.

10. In regard to claim 16, Nishikawa discloses a first and second receptacle, each containing a subset of the electrical connectors. See figure 2, elements 15, depicting the two receptacles. Also see column 9, lines 2-9, disclosing that the driver IC for the electrode layer is bonded, forming a TCP (tape carrier package) 15.” Such a TCP is thus a receptacle for electrical connectors.

11. In regard to claims 8 and 18, see rejection of claim 1. It is understood that “electrically conducting” constitutes an electrical connection.

12. In regard to claim 10, see rejection of claim 1 and column 9, line 29, disclosing that the display screen 2 is a liquid crystal display (LCD).

13. In regard to claim 11, see rejection of claims 1 and 2. As each key and touch region is associated with a common row and a distinct column, the pair of electrical connectors (row and column) is distinct from that of any other touch region or key.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nishikawa et al. 5,907,375.

16. In regard to claim 17, Nishikawa et al. discloses an invention that is similar to that which is claimed in claim 17. See rejection of claim 1 for similarities. Nishikawa et al. does not disclose the association of the touch region and the keys with either specifically the first or second receptacle, as in the claimed invention.

Nishikawa et al. discloses in column 9, lines 61-63, "The layout of the switches is not limited to a matrix and may be any layout and the number thereof may be one or more." See column 9, lines 2-9 and 18-22, and figures 1 and 2, disclosing the association of the receptacles or TCP's (element 15) with the electrical connectors or matrix of switches (electrodes).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to associate the touch region with one electrical connector from each of the first and second receptacles and associated each key with a pair of electrical connectors from the first receptacle. One would have been motivated to make such a configuration based on the teaching of Nishikawa that such connectors could have any layout. Further, associating each touch region and key with either specifically the first or second receptacle is a matter of design choice, and one can shift location of

parts without changing the scope of an invention (In re Japikse, 86 USPQ 70 (CCPA 1950)).

17. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nishikawa et al. 5,907,375 in view of McRight et al. 5,581,251.

18. In regard to claim 9, Nishikawa discloses an invention that is similar to that which is claimed in claim 9. See rejection of claim 1 for similarities. Nishikawa does not disclose that the 10 keys disclosed in his input-output unit are dome keys comprising function keys, navigation keys, and editing keys.

In column 1, lines 17-25, McRight et al. discloses, "Function keys, are standard parts for many types of electronic equipment. Typically, the function keys are plastic parts used to push down on a dome in a rubberized keypad which covers the printed circuit board...making a connection between two contact points".

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the keypad of Nishikawa include dome keys comprising function keys, such functions including navigation and editing, as is common in keypads. One would have been motivated to make such a change based on the teaching of McRight that function keys are "standard parts" and are "typically" dome keys. Thus, such a modification would be consistent with conventional keypads.

19. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nishikawa 5,907,375 in view of Dugas 5,612,692.

20. In regard to claim 7, Nishikawa discloses an invention similar to that which is disclosed in claim 7. See rejection of claim 1 for similarities. Nishikawa does not

disclose that the resistive touch membrane comprises an embossed LED window on the front surface of the membrane.

Dugas et al. discloses an invention in which function keys are associated with LED's. (See column 5, lines 24-25 and figure 7, element 46.) Dugas further discloses in column 1, lines 31-37, that such LED's are commonly provided as "status indicator lights...positioned adjacent to their associated keys."

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Nishikawa in view of Dugas by embossing LED's on the front surface of the membrane (with the keys). One would have been motivated to make such a change in order to provide status indicator lights for the function keys and also because an addition of such lights is conventional.

21. Claims 20, 21 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishikawa et al. 5,907,375 in view of Cumens et al. 5,570,632.

22. In regard to claim 20 and 21, Nishikawa discloses an invention that is similar to that which is claimed in claim 20. See 102 rejections of claims 1 and 12 for similarities. Nishikawa does not disclose that the operator interface is to communicate with a programmable logic controller of an industrial management system.

Cumens' invention is an "apparatus and method for applying and verifying marks on the periphery of generally cylindrically-shaped objects". Thus, Cumens' invention is an industrial management system. Cumens discloses in column 11, lines 1-4, and in reference to figure 9, "a block diagram of the controller 120 is shown. The controller 120 is a programmable logic controller." In lines 14-15, Cumens further discloses, "The

controller 120 can be programmed by an operator interface 122", and in lines 19-20, "the operator interface 122 is a touch screen of the type which is well known to those of ordinary skill in the art", and in lines 23-25, "it is similarly understood that the controller can receive additional input/output signals." It is understood that the connector system of the touch screen is connected to the programmable logic controller, since the programmable logic controller can be programmed by the touch screen.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Nishikawa by using it as the operator interface for an industrial management system with a programmable logic controller. One would have been motivated to make such a change based on the teaching of Cumens to use an operator interface, such as a "touch screen of the type which is well known to those of ordinary skill in the art" or "additional input/output signals", with a programmable logic controller in an industrial management system.

23. Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishikawa et al. 5,907,375 in view of Fujita et al. 5,977,888.

24. In regard to claims 23 and 24, Nishikawa discloses an invention similar to that which is disclosed in claims 23 and 24. See rejections of claims 1 and 12 for similarities. Further note that figure 1 depicts membrane 1 as an uninterrupted surface, as best understood. Nishikawa does not disclose that the front surface is uninterrupted except for a plurality of mounting holes for securing the membrane within a housing. That is, Nishikawa does not disclose mounting holes for securing the membrane within

a housing. Nishikawa is silent as to a means for securing the membrane within a housing.

Fujita discloses an invention in which a display and touch panel are mounted in a case with mounting holes. See column 30, lines 3-11, disclosing, "This fixed information display operation terminal T2 is also assembled by superposing the operation unit U, the touch panel 4 and the display device 238 with each other, inserting the same in a case 235 and thereafter screwing fixed screws 237 into screw holes 235a of the case 235 through mounting holes 236. In this fixed information display operation terminal T2, display contents can be readily changed by simply exchanging the name plates 242."

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Nishikawa by having a plurality of mounting holes for securing the membrane within a housing, as in the invention of Fujita. One would have been motivated to make such a change based on the teaching of Fujita that such a configuration allows insertion of components into a case (housing) and contents can be readily changed. Further, it is inherent that some means is provided for securing the invention of Nishikawa into a housing, since Nishikawa discloses in column 8, lines 56-57 that his invention is used in a copier. Also, mounting holes are one of many common conventional methods for securing a display, touch panel or membrane into a housing, any of which would be a choice of design.

25. Claim 25 rejected under 35 U.S.C. 103(a) as being unpatentable over Nishikawa et al. 5,907,375 in view of Cumens et al. 5,570,632 as applied to claim 20 above, and further in view of Fujita et al. 5,977,888.

26. In regard to claim 25, see rejection of claim 23.

Response to Arguments

27. Applicant's arguments filed 7 June 2004 have been fully considered but they are not persuasive. The applicant's arguments on pages 7-11 of Paper No. 8 argue recitations of the claims as newly amended. See the above rejections of the newly amended claims.

28. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., key pad 4 and screen 2 "form part of a membrane") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

29. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any


extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laurel E LeFlore whose telephone number is (703) 305-8627. The examiner can normally be reached on Monday-Friday 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (703) 305-4938. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LEL
23 July 2004


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